

Problems of Formation of Cartographic Competence at the Modern Stage of Higher Education Development

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ABSTRACT

This scientific article describes the results of research on the transition from the traditional knowledge paradigm of education to the level of personal development for the modern stage of development of higher education, the formation and development of cartographic competence of students in higher education.

KEYWORDS: *Geographical map, language of maps, cartographic skills, social pedagogical degree, scientific-methodical degree, scientific-theoretical degree*

INTRODUCTION

For the modern stage of development of higher education, the transition from the traditional knowledge paradigm of education to the level of personal development, which provides the formation and development of cartographic competence qualities of students in higher education institutions.

Cartographic competence is an integral part of students in a number of natural sciences. This is primarily explained by the fact that in modern society cartography plays an important role as a database of nature, society and their interactions. Geographic maps cannot be replaced with text or live word because they do not give the original image of the area. This allows him to see and compare the properties of any object from space at the same time. The language of the cards is a special language. It has qualities such as brevity, firmness, precision and clarity. The language of the maps can be recognized as one of the economic features that gives a complete and scientific description of the area.

The main part

Therefore, we consider it expedient to use person-centered learning technology to form cartographic competence, which represents a certain sequence of pedagogical procedures and techniques that form an integrated system that leads to the achievement of guaranteed educational goals in pedagogical practice. At the same time, the study of methodical literature, dissertations, analysis of conference materials, the study of the experience of cartographic training of students in higher education revealed the following. First, there is no single approach among local scholars to define the meaning and content of the concept of 'cartographic competence of a university student'. Second, over the past decades, the level of cartographic training of university graduates and the demands placed on them by society have been increasing due to a set of differences. It should be noted that the exact ways to solve the problem of increasing the level of cartographic readiness of students, which guarantees the achievement of educational goals,

have not yet been identified. Third, the use of educational technologies has not been considered before, taking into account the different initial levels of education in the process of cartographic training of students, the individual characteristics of students and its personal growth opportunities in the teaching of cartography.

It follows from the above that, despite the great interest of researchers, the problem of shaping students' cartographic competence through geographers in higher education remains poorly understood and very relevant.

Thus, there is a need today to resolve objectively created contradictions;

- at the social pedagogical level (between the requirements of the bachelor's cartographic competence and the actual state of his training in the higher education system);
- at the scientific and theoretical level (between the need for higher education in substantiating the problem of formation of cartographic competence and the solution of its level of scientific and theoretical development);
- at the scientific and methodological level (between the possibilities, methods and forms of teaching subjects in terms of the formation of cartographic competence and their insufficient use in the higher education system).

The pedagogical process of formation of cartographic competence of university students is characterized by the following "productive ability":

- "Fundamentals of Topography", "Cartography", "GIS" is a guaranteed effectiveness of the pedagogical process, expressed at the level of predetermined knowledge, skills and abilities in the disciplines. This implies a certain stage and logic of the organization of the pedagogical process aimed at the implementation of the norms of the state educational standard in the field of preparation and qualification requirements for graduates of higher education;

- The direction aimed at the formation of cartographic competence among students;
- Consistency and integrity, which is reflected in the interdependence and interdependence of the use of standard forms, methods, tools and procedures of teaching in educational, training and methodological work;
- The mechanism considered in terms of the search and implementation of new reasonable forms, methods, tools and procedures of educational activities used in solving current and future problems of educational, training and methodological work, ensuring a high level of training of graduates;

Thus, the above allows us to emphasize that the essence of the technological approach to the organization of teaching cartographic sciences in higher education is as follows:

- in the preliminary design of the educational process with the possibility of subsequent repetition of this project in pedagogical practice;
- taking into account the active role of the student in the organization of the educational process, his personal needs, characteristics and abilities at all stages of the development and implementation of person-centered learning technology;
- in setting specially organized goals that provide the possibility of objective quality control of the achievement of the set goals;
- the structural and content integrity of teaching technology, ie the inadmissibility of changes in one of its components without affecting others;
- in the selection of optimal methods, forms and means, determined by the natural connections of all elements of teaching technology;
- The presence of rapid feedback, which allows you to correct the learning process in a timely and effective manner.

The development of person-centered technology for teaching cartographic subjects in higher education stems from the need to change the educational process, which is carried out using traditional approaches to education and does not ensure guaranteed achievement of set learning objectives, including the formation of cartographic competencies of students.

Another important reason for the creation of specially developed technology is the readiness of students for educational activities in the framework of initial diagnostics of the level of readiness, the basics of topography, cartography, person-centered training on GIS. Such diagnostics allowed to obtain information about the initial level of knowledge and skills of students, the level of motivation to study the topic, the students' understanding of the objectives of the study of cartographic sciences.

A questionnaire was also conducted among the students to determine the initial level of education and motivation of the students. The survey was conducted to determine the level of readiness and desire of students to study cartographic subjects at the time of admission to the university. Data obtained during experimental studies to determine the elementary level of education confirm the hypothesis that many students enter higher education without adequate preparation to study cartography, topography, and GIS. All students surveyed were divided into three groups according to their level of readiness to study cartographic subjects. Preparation is presented as follows: not enough, enough and high.

The research led to the following conclusion: with a general positive attitude towards cartographic subjects, students are not ready enough, they feel the need to acquire knowledge, skills and competencies in this field.

The urgency of this problem is related to the current situation.

In recent years, there has been a growing conflict between the need of society and the state for high quality higher education and the insufficient readiness of applicants to study in the new environment of interaction with the

educational environment of higher education.

With the significant increase in the interest of young people in higher education, there is a decrease in the requirements for higher education to select applicants. As a result, universities often accept applicants with low readiness to study at higher education institutions. In particular, elementary school knowledge is lacking in the teaching of cartography, topography, and GIS: students read poorly, do not know the definition of geographic coordinates, cannot add positive and negative numbers, and do not even know how to use a ruler (they measure from 1 instead of 0). They don't know what a counter is. They don't know how to count on a column, they don't know how to calculate $1^\circ 60'$, and so on, not to mention trigonometry. There is not only a general decline in education, but also a large stratification of a group of students according to the initial levels of teaching, learning ability and motivation, which also complicates the work of the teacher.

Conclusion

Faced with new content, forms and methods of teaching, more stringent requirements, a sharp increase in the volume of teaching materials, a different work schedule, a team of teachers, etc., freshmen face great difficulties in learning both general education and special subjects. As a result, some students have to be expelled.

The reason for these difficulties is the inability of junior students to adapt to the new conditions. Let us now explain the meaning of the concept of 'adaptation'. This concept has emerged in biology to indicate that the structure and functions of organisms adapt or become accustomed to the conditions of existence. It affects all levels of the organism: from molecular to psychological regulation, to the functional, psychological and moral state of the individual. The concept of adaptation to people has the same meaning. For him, such types of adaptation are social, psychological, pedagogical (educational) and professional.

As for freshmen, two aspects of adaptation are particularly important: socio-psychological and educational.

Adaptation of freshmen to study in higher education is the process of adapting students to the educational process of higher education: a new structure (new forms, methods of teaching), a new social environment - the teaching staff of the university (student group, teaching staff), learning new subjects, including number and cartography, topography, GIS.

In our research, we consider the elements of human socialization, which is a complex multi-stage process of forming the basic personal qualities of an individual necessary for life in society, as well as mastering certain knowledge, norms and values that allow him to work fully as a member of society.

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